

ABSTRACT

A method for removing supports from a three-dimensional object formed by selective deposition modeling. The three-dimensional object is formed from a curable phase change material and the supports are formed from a non-curable phase change material. The curable phase change material contains between about 5% to about 25% of a non-reactive wax in order to achieve the desired phase change characteristics of the material. When removing the supports with heat, discoloration undesirably occurs in the three-dimensional object as the non-reactive wax migrates within the object. The method prevents wax migration by cooling the object slowly past the freezing point of the build material such that a temperature differential no greater than about 5°C is present within the object. With the preferred build material having a freezing point of about 49.5°C, this is achieved by lowering the temperature between about 62° C to about 52° C over a period of between about 5 to about 10 minutes so that the temperature of the regions of the object remain substantially equal as the freezing point is crossed during cooling.